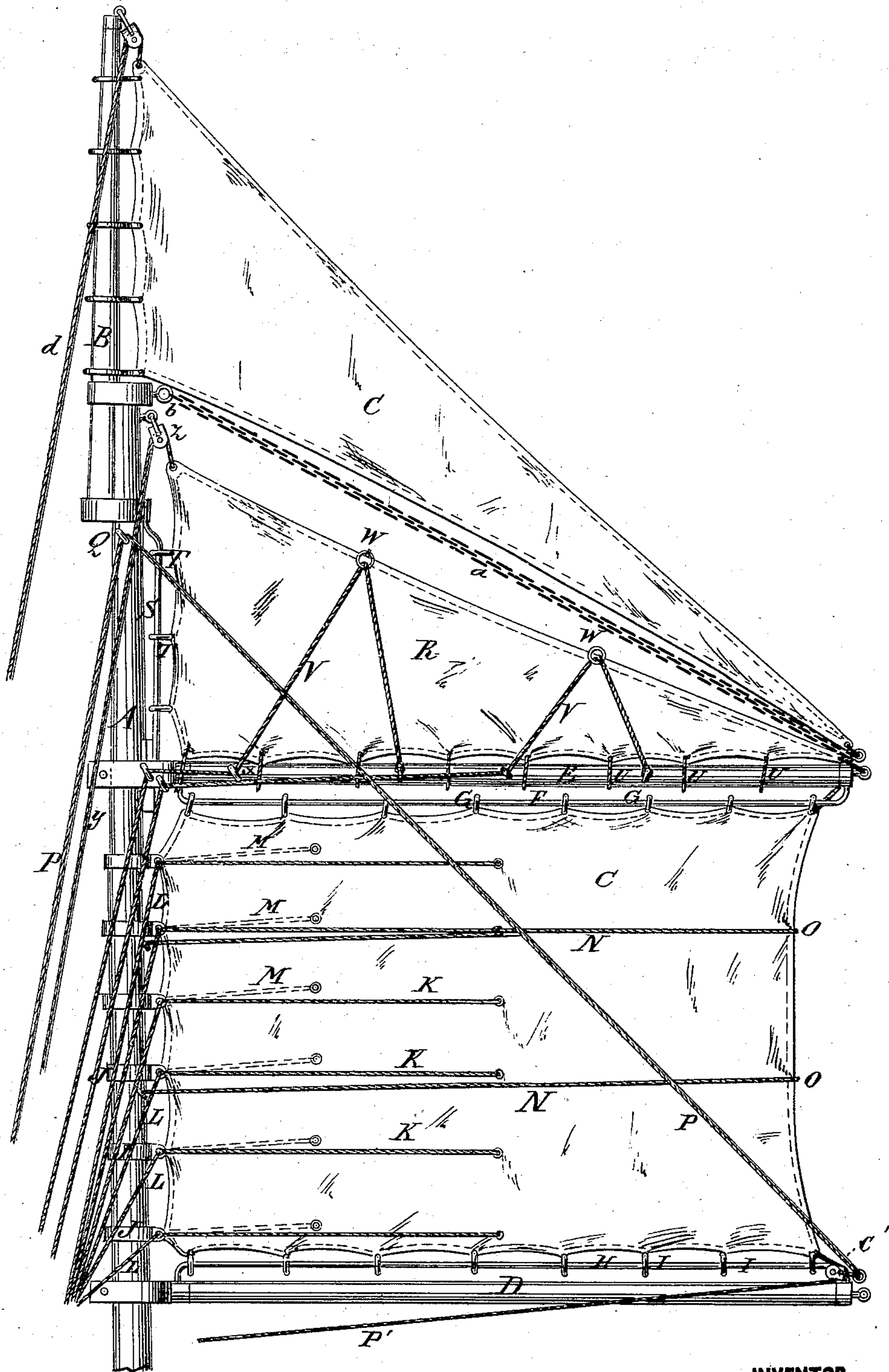


J. C. NICHOLS.  
Sails for Vessels.

No. 157,862.

Patented Dec. 15, 1874.



WITNESSES:

*Chas. Nida.*  
*A. F. Terry*

INVENTOR:

*J. C. Nichols*  
BY *Mumford*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JAMES C. NICHOLS, OF NEW YORK, N. Y.

## IMPROVEMENT IN SAILS FOR VESSELS.

Specification forming part of Letters Patent No. **157,862**, dated December 15, 1874; application filed September 12, 1874.

*To all whom it may concern:*

Be it known that I, JAMES C. NICHOLS, of the city, county, and State of New York, have invented a new and useful Improvement in Rigging Vessels, of which the following is a specification:

The invention will first be fully described, and then pointed out in the claim.

The accompanying drawing illustrates my invention, it being an elevation of the mast with topmast and sails arranged according to my invention.

A represents the mast. B is the topmast. C is the mainsail. D is the boom. E is a horizontal gaff, attached to the mast in the usual manner, to which is attached an iron rod, F, running parallel with the gaff, and supporting the upper edge of the mainsail by means of rings G. The boom D is provided with a similar iron rod, H, and the sail is attached to it in the same manner, or by the rings I. This sail is attached to the mast by means of the hoops J. K are reefing-ropes, which are attached to the halyards L in clusters of three, (more or less,) which allows the sail to be reefed to the mast instead of the boom. The shorter reefing-ropes, *m*, (seen in dotted lines,) are connected with halyards in similar manner, and the entire sail is drawn horizontally toward the mast by the ropes N. These ropes are attached to the edge of the sail, as seen at O O, and are on each side of the sail, and serve as stays to support it. P is a stay-rope attached to the end of the boom, running to the mast in a diagonal direction across the sail, and is attached to the mast at the point Q, from which point the halyard descends to the deck. P' is a rope for spreading the mainsail C, and passes around the pulley-block C'. The sail R, it will be seen, is entirely separate from the mainsail, and is reefed to the gaff,

being connected with the mast by the rod S and rings T, and confined to the gaff by the ropes *u*. V are the reefing-ropes, attached to staples in the gaff, and passing up they pass through rings W in the upper edge, and then descend and pass through rings X in the gaff and descend to the deck.

This sail is spread and held in position by the rope Y, which is attached to the upper corner, and passes over the block Z, and then descends to the deck.

The gaff is supported in a horizontal position by the chain *a*, which is attached to the end of the gaff and to the mast, as seen at *b*.

*c* is the topsail, which is spread by the rope *d*, and is reefed to the chain, if desired.

By this mode of rigging the upper sails are readily taken in, and only require to be brailed up, as no furling is necessary, and the vessel would be under single-reefed sails at once, which, in squally weather, would be a great advantage.

These sails can be spread in one-fourth part of the time that is ordinarily required.

By this method the sails are made less liable to be torn or obstructed with ice in winter; and all the sails being operated from the deck the advantage of this method must be apparent to all.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with the gaff of a fore-and-aft sail, of the independent sail R, connected with the mast by means of the rod S and rings T, and adapted to be furled to the gaff, as and for the purpose set forth.

JAMES C. NICHOLS.

Witnesses:

T. B. MOSHER,  
ALEX. F. ROBERTS.